

VI. PROJECTED MUNICIPAL SOLID WASTE AND SEPTAGE

Projecting the amount of solid waste generated by a community is difficult because of the variables involved; population growth, consumer habits, the amount of recycling and re-use, and whether solid waste is collected or self-hauled. The U.S. National average is 4-pounds/person/day of solid waste production. A recent study⁵ for Prince of Wales Island projects a solid waste production of 6.5-pounds/person/day. Since solid waste in Gustavus will probably be self-hauled (as opposed to collected by the community) for the foreseeable future, a production rate of 5-pounds/person/day is used in this study. This equates to about 1-ton/person/year.

Projecting the future population of Gustavus is even more difficult because of the recent rapid growth of the community and the associated seasonal transience. The current population (on a daily basis) is calculated as follows (including Bartlett Cove):

Winter	(Oct-Apr):	250 people
Summer	(May-Sep):	350 people
Tourists	(Jun-Aug):	200 people

Calculating the yearly amount of solid waste produced is accomplished by combining the solid waste generation estimate and the population estimate.

⁵ Prince of Wales Island Solid Waste Management Study, J.M. Montgomery Engineers, Juneau, 1991.

Winter:	250 x .5 ton x 7/12 year =	73 tons	(37%)
Summer:	350 x .5 ton x 5/12 year =	73 tons	(37%)
Tourists:	200 x 1 ton x 3/12 year =	<u>50 tons</u>	(26%)

Total solid waste produced per year = 196 tons (100%)

It is assumed that solid waste generated by residents can be reduced by 50 percent through waste reduction and recycling. This is discussed in more detail in the following section.

To complete the municipal solid waste projection for Gustavus, a population growth rate must be assumed. Since the population growth has been very rapid in the last few years, a smaller population growth rate is more likely in the future, and a rate of 2 percent per year is assumed for the next 25 years.

The following additional assumptions were made concerning the construction of a permitted landfill:

- 50-year landfill life
- Waste-to-cover ratio of 4:1
- Settled landfill density of 1,000-lb./cu.yd.
- Square landfill footprint
- Sideslopes of 3:1
- Minimum landfill top dimension 200-ft. x 200-ft.
- Landfill will be lined and have a leachate collection underdrain

Projecting the amount of septic tank sludge produced in the community also depends on several variables. Presently there are about 20 septic tanks in Gustavus, but this number may grow significantly as residents install modern plumbing and more

people become permanent residents. It is conceivable that 50 septic tanks will eventually be installed in Gustavus, each requiring pumping every two years. This will produce 25,000 gallons of septic tank sludge yearly, assuming that each tank is 1,000 gallons in capacity.

